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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/925,085	08/08/2001	Ying Choy Siew	S01.12-0801/STL 10011	3093

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EXAMINER

PATEL, PARESH H

ART UNIT PAPER NUMBER

2829

DATE MAILED: 03/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/925,085

Applicant(s)

SIEW ET AL.

Examiner

Paresh Patel

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-13 is/are allowed.
- 6) ☒ Claim(s) 14, 15 and 17-22 is/are rejected.
- 7) ☒ Claim(s) 16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination (RCE) under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection.

Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/03/2003 has been entered.

Allowable Subject Matter

2. Claims 1-13 are allowed.

The following is an examiner's statement of reasons for allowance: Prior art of record (also see the arguments of paper filed on 09/30/2003 by the applicant) does not teach or suggest in combination that a test assembly for testing a printed circuit board comprising a fixture including plurality of terminals on first and second interfaces, a clamp assembly adapted to selectively secure the fixture relative to an actuator, said actuator operably coupled to the fixture to install the fixture relative to a test device and terminals of printed circuit board are electrically connected to the plurality of terminals of said second interface as further defined in claim 1.

The following is an examiner's statement of reasons for allowance: Prior art of record (also see the arguments of paper filed on 09/30/2003 by the applicant) does not teach or suggest in combination that a test assembly comprising: a fixture including

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plurality of terminals on first and second interfaces; terminals of printed circuit board are electrically connected to the plurality of terminals of said second interface; and means for removably installing the fixture to a test engine to provide an electrical connection between the test engine and the printed circuit board as further defined in claim 11.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

3. Claim 16 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: Prior art of record (also see the arguments of paper filed on 09/30/2003 by the applicant) does not teach or suggest in combination that a method for testing circuit boards comprising clamping the fixture relative to the support surface comprises rotating a clamp member from a first orientation to a second orientation as further defined in claim 16.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 14-15 and 18-22 rejected under 35 U.S.C. 102(b) as being anticipated by Wexler et al. (US 5436567).

Regarding claim 14, Wexler et al. (hereafter Wexler) A method for testing circuit boards comprising steps of:

clamping [inherent to 26 and 26-31 with 14, see fig. 3A] **a fixture** [26 with 32] having a first interface [one side of 26] having a plurality of interface terminals [one side of 32] and a second interface [other side of 26] having a plurality of interface terminals [other side of 32] electrically coupled [32] to the plurality of interface terminals on the first interface to **an actuator assembly** [28-31];

operating the actuator assembly to move the fixture from a first position [position of 26 at fig. 3B] spaced from a test device [ATE (not shown)] to a second position [position of 26 at fig. 3C] so that the terminals of the first interface electrically interface with terminals on the test device [ATE, lines 44-50 of column 3] for use [using 15, 17 of fig. 3B and 3C]; and

operating an actuator [using 5 and 17 with 36-39] to selectively bias [fig. 3C] at least one circuit board [12] relative to the plurality of interface terminals of the second interface [lines 38-45 of column 4 and fig. 3C].

Regarding claim 15, Wexler discloses the method of claim 14 wherein the step of clamping the fixture comprising: loading the fixture onto a support surface [14] coupled

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to the actuator assembly and clamping the fixture relative to the support surface [mounting as defined at lines 56-61 of column 3].

Regarding claim 18, Wexler discloses the method of claim 14 and further comprising the steps of: operating the actuator assembly to retract the fixture from the test device [inherent to retraction of test fixture during rapid adapting, lines 47-49 of column 2]; unclamping the fixture from the actuator assembly [inherent to unclamping of test fixture during rapid adapting, lines 47-49 of column 2]; and removing the fixture and installing a different fixture relative to the test device [inherent to rapid adapting of a test fixture for customized application, lines 47-49 of column 2].

Regarding claim 19, Wexler discloses the step of positioning the at least one circuit board between the fixture and a cover [16 with 24] having interface terminals [34]; and biasing the cover [fig. 3C] relative to the at least one circuit board to electrically connect the circuit board to the plurality of interface terminals on the fixture and the cover [fig. 3C with ATE].

Regarding claim 20, Wexler discloses: a test assembly [10] comprising: a test circuit [26 with 32] adapted to electrically test a particular circuit board [12]; and means [18, 14, 15, 17, 54, 28-31, 36-39] for operably engaging the test circuit against the circuit board.

Regarding claim 21, Wexler discloses: the test assembly of claim 20 wherein the test circuit includes a fixture [26 and 32] operably movable between a retracted position [fig. 3A], and an installed position [fig. 3C] where the circuit board is tested.

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Regarding claim 22, Wexler discloses the test circuit further comprises a cover [24 with 34 and 16] wherein both sides of the circuit board [12] are electrically engageable [with 32 and 34].

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wexler as applied to claim 15 above, and further in view of Rabkin et al. (US 5828223).

Regarding claim 17, Wexler discloses all the elements except for sequentially coupling a plurality of circuit boards relative to the plurality of interface terminals on the second interface; and sequentially testing operation of the plurality of circuit boards. Rabkin et al. (hereafter Rabkin) invented a robotic test machine for testing chips with novel interface between chips and a test head load boards, allowing rapid changes of products being tested, including a docking plate and vertical support (see abstract). Here, Rabkin discloses sequentially coupling a plurality of circuit boards [plurality of 22a of fig. 1 with plurality of test boards 25 and lines 16-20 of column 3] relative to the plurality of interface terminals [terminals of 22a with 61 and 62] on the second interface; and sequentially testing operation of the plurality of circuit boards [lines 1-20 of column 3]. It would have been obvious to a person having ordinary skill in the art at the time the

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invention was made to modify the test assembly of Wexler to test plurality of circuit boards as taught by Rabkin so sequentially testing operation of sequentially coupled circuit boards provides more reliable testing with improved electrical connection integrity as per Rabkin [also see lines 4-11 of column 1].

Response to Arguments

8. Applicant's arguments filed 09/30/2003 have been fully considered but they are not persuasive.

At page 12, Applicant regarding claims 14-18, particularly for claim 16 is moot because claim 16 (which depends from claim 14) would be allowable if rewritten in independent form.

Argument regarding claims 20-22, particularly for claim 20 is moot because of new ground of rejection. Also plurality of test board 25 of Radkin forms circuit board 30 and plurality of chips with 25 of Radkin also forms circuit board 25.

Argument regarding claim 19 (which is currently amended) and depends from claim 14 is also moot because of new ground of rejection.

Argument regarding claim 22, which depends from claim 21 and 20 is also moot because of new ground of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paresh Patel whose telephone number is 571-272-1968. The examiner can normally be reached on 8:00 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamand Cuneo can be reached on 571-272-1957. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Paresh Patel
Feb. 20, 2004

A handwritten signature in black ink, appearing to read 'Paresh', written over a stylized, angular graphic element.